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U.S. Sugar October 2011

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The next release is November 15, 2011

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On October 12, 2011, the U.S. Department of Agriculture (USDA) released its latest U.S. and Mexico sugar supply and use estimates for fiscal year (FY) 2011 and projections for FY 2012 in the *World Agricultural Supply and Demand Estimates* (WASDE) report. For FY 2011, the USDA reduced its projection of beet sugar production to 4.675 million short tons, raw value (STRV), a reduction of 125,000 STRV, or 2.6 percent, compared with last month's projection. A late start to the 2011/12 harvest in the Red River Valley resulted in lower-than-normal sugar production in September, the last month of the fiscal year. Given the elevated degree of uncertainty this harvest season, there was no offsetting increase made to the beet sugar production projection for FY 2012. For FY 2011, the USDA decreased its estimate of tariff-rate quota (TRQ) imports by 149,000 STRV, mainly reflecting the deferral of FY 2011 raw and refined sugar TRQ imports until the early part of the next fiscal year. On September 30, 2011, the USDA announced an increase to the FY 2011 refined sugar TRQ of 150,000 STRV and extended the date this sugar is eligible to enter the United States until November 30, 2011. The deferral of this sugar, plus the anticipated entry of FY 2011 TRQ raw sugar in October, is reflected in the 252,000 STRV increase to TRQ entries projected for FY 2012. Estimated sugar imported from Mexico in FY 2011 was increased to 1.687 million STRV, reflecting actual entries recorded by the U.S. Customs Service prior to the release of the WASDE. Sugar use was increased by 100,000 STRV in both FY 2011 and FY 2012. Ending stocks for FY 2011 are estimated at 1.418 million STRV, implying an ending stocks-to-use ratio of 12.2 percent. For FY 2012, ending stocks are projected at 889,000 STRV, implying an ending stocks-to-use ratio of 7.7 percent.

In Mexico, estimated exports were increased by 58,000 metric tons, raw value (MTRV) to 1.540 million MTRV. This change was made because of the increase in recorded imports from Mexico by the United States in September. Because no other supply or use changes were made, estimated ending stocks for FY 2011 dropped by 58,000 MTRV to 720,000 MTRV. For FY 2012, the Interagency Commodity Estimates Committee (ICEC) for sugar assumes that ending stocks will equal 22.0 percent of expected sugar consumption, or 95 3,000 MTRV. The implication of this assumption is that exports are calculated residually, meaning that the FY 2012 exports are reduced by 58,000 MTRV to 1.055 million MTRV.

Sugar in the North American Free Trade Area (NAFTA)

On October 12, 2011, the USDA released its latest U.S. and Mexico sugar supply and use estimates for fiscal year (FY) 2011 and projections for FY 2012 in the *World Agricultural Supply and Demand Estimates* (WASDE) report.

Beet Sugar Production

The USDA reduced its projection of FY 2011 beet sugar production to 4.675 million short tons, raw value (STRV), a reduction of 125,000 STRV, or 2.6 percent compared with last month's projection. Beet sugar production has totaled 4.436 million STRV through August. In *Sweetener Market Data* (SMD), beet processors forecast September 2011 production at 240,000 STRV, only 68 percent of the average September production for the last 5 years. In *Crop Progress* from the National Agricultural Statistics Service (NASS), the percentage of the 2011/12 crop harvested in the Red River Valley through October 2 amounted to only 14 percent. Last year the corresponding percentage was 32 percent, and the average for the previous 5 years is estimated at 25 percent. Given the elevated degree of uncertainty this harvest season, there was no offsetting increase made to the beet sugar production projection for FY 2012 – the forecast remains at 4.575 million STRV.

Cane Sugar Production

The FY 2012 cane sugar forecast is 3.360 million STRV, the same as last month. This is 211,600 STRV more than last year and is basically attributable to a return to a normal crop in Florida. FY 2011 production in Texas was increased to 145,793 STRV to reflect finalized production reported in SMD.

Trade

On September 30, 2011, the USDA announced an increase to the FY 2011 refined sugar tariff-rate quota (TRQ) of 150,000 STRV. The USDA has also extended the date this sugar is eligible to enter the United States to November 30, 2011. This sugar must have a sucrose content, by weight in the dry state, corresponding to a reading of 99.5 degrees polarity or more. The U.S. Trade Representative (USTR) allocated a total of 27,558 STRV (25,000 metric tons, raw value (MTRV)) of this amount to Canada and 122,443 STRV (111,078 MTRV) to be administered on a first-come, first-serve basis.

Earlier, on August 26, 2011, the USDA announced that sugar entering the United States under the FY 2011 raw sugar TRQ could enter U.S. Customs territory until October 31, 2011, a month later than the usual last entry date. Also, the USDA previously announced, on August 1, 2011, that sugar entering under the FY 2012 raw sugar TRQ could enter U.S. Customs territory beginning September 1, 2011, a month earlier than the usual first entry date of October 1. These announcements did not change the level of any U.S. sugar import TRQs.

Tables 1 and 2 detail sugar imports estimated for FY 2011 and projected for FY 2012. For FY 2011, the USDA decreased its estimate of TRQ imports by 149,000 STRV, mainly reflecting changes in the projection of deferred FY 2011 raw and refined sugar TRQ imports entering in the early part of the next fiscal year. Deferred raw sugar TRQ imports are estimated at 123,306 STRV, and deferred refined sugar TRQ imports are estimated at 150,635 STRV. The USDA also expects 46,897 STRV of sugar allocated to countries under the Dominican Republic/Central American Free Trade Agreement (CAFTA/DR) for calendar year 2011 to enter in the first quarter of FY 2012. FY 2012 TRQ sugar imports are projected at 1.636 million STRV, an increase of 252,000 STRV.

Estimated sugar imports from Mexico in FY 2011 were increased to 1.687 million STRV, reflecting actual entries recorded by the U.S. Customs Service prior to the release of the WASDE. Other program imports for re-export finished the fiscal year at 281,462 STRV. As explained below, sugar imports from Mexico projected for FY 2012 were decreased by the same amount as the import increase for FY 2011. The projected total is 1.155 million STRV.

Table 1--USDA estimate of sugar imports in FY 2011

	Metric tons, raw value	Short tons, raw value
Raw sugar TRQ	1,520,892	1,676,497
Less shortfall attributable to Mexico 1/	0	0
Less other shortfall	-77,166	-85,061
Plus FY 2010 TRQ entries in October 2010	32,971	36,344
Less FY 2011 TRQ entries in September 2010	-37,007	-40,793
Less FY 2011 TRQ entries in October 2011	-111,861	-123,306
Plus FY 2012 TRQ entries in September 2011	20,062	22,115
Total raw sugar TRQ	**1,347,891**	**1,485,796**
Refined sugar TRQ		
Allocation to Canada	35,300	38,912
FY 2011 Canadian sugar to enter in FY 2012	-25,575	-28,192
Allocation to Mexico	0	0
Less Mexican shortfall 1/	0	0
Global	118,168	130,258
FY 2011 Global to enter in FY 2012	-111,078	-122,443
Specialty		
Base	1,656	1,825
Additional	77,111	85,000
August increase	9,072	10,000
Total refined sugar TRQ	**104,654**	**115,361**
CAFTA/DR TRQ - calendar 2011	**125,700**	**138,561**
CAFTA/DR FY 2011, likely to enter FY 2012	-42,544	-46,897
Other:		
Singapore, Bahrain, Jordan	20	22
Less shortfall	-4	-4
Peru	2,000	2,205
Less shortfall	-2,000	-2,205
Total estimate TRQ entries	**1,535,717**	**1,692,838**
Mexico	**1,530,266**	1,686,829
Re-export program imports	**255,338**	281,462
Sugar syrups, high-tier	**18,144**	**20,000**
Total projected imports	**3,339,464**	**3,681,129**

1/ Total entries from Mexico, quota and non-quota, reflected below.
Source: USDA, Foreign Agricultural Service,.

Table 2--USDA estimate of sugar imports in FY 2012

	Metric tons, raw value	Short tons, raw value
Raw sugar TRQ	1,117,195	1,231,497
Less shortfall attributable to Mexico 1/		
Less other shortfall	-104,391	-117,875
Plus FY 2011 TRQ entries in October 2011	111,861	123,306
Less FY 2012 TRQ entries in September 2011	-20,062	-22,115
Total raw sugar TRQ	**1,104,603**	**1,214,812**
Refined sugar TRQ		
Allocation to Canada	12,050	13,283
FY 2011 Canadian sugar to enter FY 2012	25,575	28,192
Allocation to Mexico		
Less Mexican shortfall 1/		
Global	8,294	9,143
FY 2011 Global sugar to enter FY 2012	111,078	122,443
Specialty		
Base	1,656	1,825
Additional	90,718	100,000
Total refined sugar TRQ	**249,371**	**274,885**
CAFTA/DR TRQ - calendar 2012	**128,020**	**141,118**
CAFTA/DR FY 2011, likely to enter in FY 2012	42,544	46,897
CAFTA/DR FY 2012, forecast to enter in FY 2013	-40,000	-44,092
Other:		
Singapore, Bahrain, Jordan	21	23
Peru	2,000	2,205
Total estimate TRQ entries	**1,486,560**	**1,635,847**
Mexico	**1,047,809**	**1,155,000**
Re-export program imports	**317,518**	**350,000**
Sugar syrups, high-tier	**9,072**	**10,000**
Total projected imports	**2,860,959**	**3,150,847**

1/ Total entries from Mexico, quota and non-quota, reflected below.
Source: USDA, Foreign Agricultural Service.

Sugar Use and Stocks

Sugar deliveries for human consumption are unchanged from last month: 11.0 million STRV for FY 2011 and 11.125 million STRV for FY 2012. Also unchanged are sugar exports: 250,000 STRV for FY 2011 and 200,000 STRV for FY 2012, as well as other deliveries (re-export sugar for sugar-containing products, sugar for polyhydric alcohol, and sugar for livestock feed), which are still 235,000 STRV for FY 2011 and 190,000 STRV for FY 2012. USDA expects that miscellaneous items (refining losses, inventory adjustments, import trade data source differences between SMD and the WASDE) to finish the year at 100,000 STRV. This amount is carried forward to FY 2012 as well. These actions have the effect of increasing total use in both years by 100,000 STRV.

The net effect of all current-year changes is to decrease FY 2011 ending year stocks by over 327,000 STRV to 1.418 million STRV, implying an ending year stocks-to-use ratio of 12.2 percent. The ratio last month was estimated at 15.2 percent. Ending stocks projected for FY 2012 are decreased 238,000 STRV to 889,000 STRV. The implied stocks-to-use ratio is 7.7 percent, a drop of 2.1 percentage points from last month.

Sugar in Mexico

In Mexico, estimated exports were increased by 58,000 MTRV to 1.540 million MTRV. This change was made because of the increase in recorded imports from Mexico by the United States in September. Because no other supply or use changes were made, estimated ending stocks for FY 2011 dropped by 58,000 MTRV to 720,000 MTRV. For FY 2012, the Interagency Commodity Estimates Committee (ICEC) for sugar assumes that ending stocks will equal 22.0 percent of expected sugar consumption, or 953,000 MTRV. The implication of this assumption is that exports are calculated residually, meaning that the FY 2012 exports are reduced by 58,000 MTRV to 1.055 million MTRV.

The *Comite Nacional Para El Desarrollo Sustentable de la Cana de Azuca* (CNDSCA) has not announced its FY 2012 production forecast yet. The USDA still forecasts production at 5.650 million MTRV (5.330 million tonnes, tel quel).

Table 3–U.S. sugar: supply and use, by fiscal year 1/, 10/17/11

Items	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
						1,000 short tons, raw value						
Beginning stocks 2/	2,216	2,180	1,528	1,670	1,897	1,332	1,698	1,799	1,664	1,534	1,498	1,418
Total production 3/, 4/	8,769	7,900	8,426	8,649	7,876	7,399	8,445	8,152	7,531	7,963	7,823	7,935
Beet sugar	4,680	3,915	4,462	4,692	4,611	4,444	5,008	4,721	4,214	4,575	4,675	4,575
Cane sugar	4,089	3,985	3,964	3,957	3,265	2,955	3,438	3,431	3,317	3,387	3,148	3,360
Florida	2,057	1,980	2,129	2,154	1,693	1,367	1,719	1,645	1,577	1,646	1,433	1,630
Louisiana	1,585	1,580	1,367	1,377	1,157	1,190	1,320	1,446	1,397	1,469	1,400	1,400
Texas	206	174	191	175	158	175	177	158	152	112	146	160
Hawaii	241	251	276	251	258	223	222	182	192	161	170	170
Puerto Rico	0	0	0	0	0	0	0	0	0	0		
Total imports	1,590	1,535	1,730	1,750	2,100	3,443	2,080	2,620	3,082	3,320	3,681	3,151
Tariff-rate quota imports 5/	1,277	1,158	1,210	1,226	1,408	2,588	1,624	1,354	1,370	1,854	1,693	1,636
Other program Imports	238	296	488	464	500	349	390	565	308	448	281	350
Non-program imports	76	81	32	60	192	506	66	701	1,404	1,017	1,707	1,165
Mexico 6/							60	694	1,402	807	1,687	1,155
Total supply	12,575	11,615	11,684	12,070	11,873	12,174	12,223	12,571	12,277	12,817	13,003	12,504
Total exports 3/	141	137	142	288	259	203	422	203	136	211	250	200
Quota-exempt for reexport	141	137	142	288	259	203	422	203	136	211	250	200
Other exports	0	0	0	0	0	0						
CCC disposal, for export	0	0	0	0	0	0						
Miscellaneous	123	-24	161	23	94	-67	-132	0	0	-45	0	0
CCC disposal, for domestic non-food use	10	0	0	0	0	0	0	0	0	0	0	0
Refining loss adjustment	0	0	0	0	0	0	0	0	0	-45	0	0
Statistical adjustment 7/ 8/	113	-24	161	23	94	-67	-132	0	0	0	0	0
Deliveries for domestic use	10,132	9,974	9,711	9,862	10,188	10,340	10,135	10,704	10,607	11,152	11,335	11,415
Transfer to sugar-containing products for exports under reexport program	98	156	183	142	121	106	169	141	120	201	195	150
Transfer to polyhydric alcohol, feed	33	33	24	41	48	51	53	61	46	35	40	40
Deliveries for domestic food and beverage use 9/	10,000	9,785	9,504	9,678	10,019	10,184	9,913	10,501	10,441	10,917	11,100	11,225
Total use	10,396	10,087	10,014	10,172	10,542	10,476	10,424	10,907	10,743	11,319	11,585	11,615
Ending stocks 2/	2,180	1,528	1,670	1,897	1,332	1,698	1,799	1,664	1,534	1,498	1,418	889
Privately owned	1,395	1,316										
CCC	784	212										
						Percent						
Stocks-to-use ratio	20.97	15.15	16.68	18.65	12.63	16.21	17.25	15.26	14.28	13.24	12.24	7.65

NOTE: Numbers may not add due to rounding.

1. Fiscal year beginning October 1. 2. Stocks in hands of primary distributors and CCC. 3. Historical data are from FSA (formerly ASCS), *Sweetener Market Data* (SMD), and NASS, Sugar Market Statistics prior to 1992. 4. Production reflects processors' projections compiled by the Farm Service Agency.
5. Actual arrivals under the tariff-rate quota (TRQ) with late entries, early entries, and (TRQ) overfills assigned to the fiscal year in which they actually arrived.
6. Starting in 2007/08, total includes imports under Mexico's WTO TRQ allocation for raw and refined sugar.
7. Receipts compiled by NASS and FSA Customs data. 8. Calculated as a residual. Largely consists of invisible stocks change.
9. For FY 2008-09 and 2011-12, combines SMD deliveries for domestic human use, SMD miscellaneous uses, and the difference between SMD imports and *World Agricultural Supply and Demand Estimates* imports.

Source: USDA, Foreign Agricultural Service, *World Supply and Demand Estimates* (WASDE).

Table 4--U.S. sugar: supply and use (including Puerto Rico), fiscal years, metric tons 1/, 10/17/11

Items	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
						1,000 metric tons, raw value						
Beginning stocks 2/	2,010	1,977	1,386	1,515	1,721	1,208	1,540	1,632	1,510	1,392	1,359	1,286
Total production 3/ ,4/	7,955	7,167	7,644	7,846	7,145	6,712	7,662	7,396	6,832	7,224	7,097	7,199
Beet sugar	4,245	3,552	4,048	4,257	4,183	4,032	4,543	4,283	3,823	4,151	4,241	4,150
Cane sugar	3,710	3,615	3,596	3,590	2,962	2,681	3,119	3,113	3,010	3,073	2,856	3,048
Florida	1,866	1,796	1,932	1,954	1,536	1,241	1,559	1,492	1,431	1,493	1,300	1,479
Louisiana	1,438	1,433	1,240	1,249	1,049	1,079	1,198	1,312	1,267	1,332	1,270	1,270
Texas	187	158	173	159	143	159	161	143	138	101	132	145
Hawaii	219	227	251	228	234	202	201	165	174	146	154	154
Puerto Rico	0	0	0	0	0	0	0	0	0	0	0	0
Total imports	1,443	1,393	1,570	1,588	1,905	3,124	1,887	2,377	2,796	3,012	3,339	2,858
Tariff-rate quota imports 5/	1,158	1,051	1,098	1,113	1,277	2,348	1,473	1,228	1,243	1,682	1,536	1,484
Other program Imports	216	269	443	421	454	317	354	513	279	407	255	318
Non-program imports	69	73	29	54	174	459	60	636	1,274	923	1,548	1,057
Mexico 6/	0	0	0	0	0	0	54	630	1,272	732	1,530	1,048
Total Supply	11,408	10,537	10,599	10,950	10,771	11,044	11,088	11,404	11,138	11,627	11,796	11,343
Total exports 3/	128	125	129	261	235	184	383	184	123	191	227	181
Quota-exempt for re-export	128	125	129	261	235	184	383	184	123	191	227	181
Other exports	0	0	0	0	0	0	0	0	0	0	0	0
CCC disposal, for export	0	0	0	0	0	0	0	0	0	0	0	0
Miscellaneous	112	-22	146	20	85	-61	-120	0	0	-41	0	0
CCC disposal, for domestic non-food use	0	0	0	0	0	0	0	0	0	0	0	0
Refining loss adjustment	0	0	0	0	0	0	0	0	0	0	0	0
Statistical adjustment 7/ 8/	112	-22	146	20	85	-61	-120	0	0	-41	0	0
Deliveries for domestic use	9,191	9,048	8,810	8,947	9,243	9,381	9,194	9,710	9,623	10,117	10,283	10,356
Transfer to sugar-containing products for exports under re-export program	89	141	166	129	110	96	153	128	109	183	177	136
Transfer to polyhydric alcohol, feed	30	30	22	38	44	46	48	56	42	31	36	36
Deliveries for domestic food and beverage use 9/	9,072	8,877	8,622	8,780	9,089	9,239	8,993	9,527	9,472	9,903	10,070	10,183
Total Use	9,431	9,151	9,084	9,228	9,563	9,504	9,457	9,895	9,746	10,268	10,510	10,537
Ending stocks 2/	1,977	1,386	1,515	1,721	1,208	1,540	1,632	1,510	1,392	1,359	1,286	806
Privately owned	1,266	1,194	0	0	0	0	0	0	0	0	0	0
CCC	711	192	0	0	0	0	0	0	0	0	0	0
							Percent					
Stocks-to-use ratio	20.97	15.15	16.68	18.65	12.63	16.21	17.25	15.26	14.28	13.24	12.24	7.65

NOTE: Numbers may not add due to rounding.

1. Fiscal year beginning October 1. 2. Stocks in hands of primary distributors and CCC. 3. Historical data are from FSA (formerly ASCS), *Sweetener Market Data* (SMD), and NASS, Sugar Market Statistics prior to 1992. 4. Production reflects processors' projections compiled by the Farm Service Agency.
5. Actual arrivals under the tariff-rate quota (TRQ) with late entries, early entries, and (TRQ) overfills assigned to the fiscal year in which they actually arrived.
6. Starting in 2007/08, total includes imports under Mexico's WTO TRQ allocation for raw and refined sugar.
7. Receipts compiled by NASS and FSA Customs data. 8. Calculated as a residual. Largely consists of invisible stocks change.
9. For FY 2008-09 and 2011-12, combines SMD deliveries for domestic human use, SMD miscellaneous uses, and the difference between SMD imports and World Agricultural Demand Estimates imports.

Source: USDA, Foreign Agricultural Service, *World Supply and Demand Estimates* (WASDE).

Table 5--Mexico: sugar production and supply, and sugar and HFCS utilization (sugar - metric tons, raw value), 10/17/11

Fiscal Year (Oct/Sept)	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011 1/	2012 1/
							1,000 metric tons, raw value						
Beginning stocks	941	1,063	1,548	1,172	1,194	1,237	1,965	1,294	1,718	1,975	624	973	720
Production	4,979	5,220	5,169	5,229	5,330	6,149	5,604	5,633	5,852	5,260	5,115	5,495	5,650
Imports	37	43	52	63	327	268	240	474	226	160	861	392	270
Supply	5,957	6,326	6,769	6,464	6,851	7,654	7,809	7,401	7,796	7,395	6,600	6,860	6,640
Disappearance													
Human consumption	4,445	4,481	5,004	5,097	5,380	5,279	5,326	5,133	5,090	5,065	4,615	4,277	4,332
Other consumption	131	142	180	135	220	282	323	390	414	475	302	323	300
Miscellaneous									-360	-136	-27		
Total	4,576	4,623	5,184	5,232	5,600	5,561	5,649	5,523	5,144	5,404	4,890	4,600	4,632
Exports	318	155	413	38	14	128	866	160	677	1,367	737	1,540	1,055
Total use	4,894	4,778	5,597	5,270	5,614	5,689	6,515	5,683	5,821	6,771	5,627	6,140	5,687
Ending stocks	1,063	1,548	1,172	1,194	1,237	1,965	1,294	1,718	1,975	624	973	720	953
							1,000 metric tons, tel quel/actual weight						
Beginning stocks	888	1,003	1,460	1,106	1,126	1,167	1,854	1,221	1,621	1,863	589	918	679
Production	4,697	4,925	4,876	4,933	5,028	5,801	5,287	5,314	5,521	4,962	4,825	5,184	5,330
Imports	35	41	49	59	308	253	226	447	213	151	812	370	255
Supply	5,620	5,968	6,386	6,098	6,463	7,221	7,367	6,983	7,355	6,976	6,226	6,472	6,264
Disappearance													
Human consumption	4,193	4,227	4,721	4,808	5,075	4,980	5,025	4,843	4,802	4,778	4,354	4,035	4,087
Other consumption	124	134	170	127	208	266	305	368	391	448	285	305	283
Miscellaneous									-340	-128	-25		
Total	4,317	4,361	4,891	4,936	5,283	5,246	5,329	5,211	4,853	5,098	4,613	4,340	4,370
Exports	300	146	390	36	13	120	817	151	639	1,290	695	1,453	995
Total use	4,617	4,508	5,280	4,972	5,296	5,367	6,146	5,362	5,492	6,388	5,308	5,792	5,365
Ending stocks	1,003	1,460	1,106	1,126	1,167	1,854	1,221	1,621	1,863	589	918	679	899
								Percent					
Stocks-to-human consumption	23.9	34.5	23.4	23.4	23.0	37.2	24.3	33.5	38.8	12.3	21.1	16.8	22.0
Stocks-to-use	21.7	32.4	20.9	22.7	22.0	34.6	19.9	30.2	33.9	9.2	17.3	11.7	16.8
HFCS consumption (dry weight)	580	600	263	130	135	355	667	698	782	653	1,418	1,600	1,609

1/ Forecast.

Source: USDA, Foreign Agricultural Service, PSD database (historical data); *World Agricultural Supply and Demand Estimates* (forecast data).

The Potential of High Fructose Corn Syrup to Displace Sugar in Mexico

With the full implementation of the sugar provisions of the North American Free Trade Agreement (NAFTA) in 2008, sugar imported from Mexico has become an important source of supply to meet domestic sugar demand. These imports constituted 6.7 percent of demand in FY 2008 and grew to 13.5 percent in FY 2009. The FY 2011 share is estimated at 15.3 percent and the FY 2012 share, although projected lower, will still likely be above 10 percent.

Sugar export availability in Mexico depends on a number of factors. These include sugar production and research, Mexican Government sugar import policies, the development of marketing channels and transportation infrastructure, attention to sugar quality concerns, and demand for sugar in Mexico. This last item is the focus of this chapter. For a number of uses, high fructose corn syrup (HFCS) can substitute for sugar. Mexico already produces HFCS domestically (about 475,000 metric tons (mt), dry basis, annually) and imports even more from the United States. HFCS consumption in Mexico has grown from 335,000 mt in 2004/05 to an estimated 1.6 million mt in 2010/11.

Figure A-1 shows sugar and HFCS consumption in Mexico since 2004/05. As HFCS consumption has increased, sugar consumption has decreased – implying that there is more sugar available for export. Figure A-2 illustrates the important correlations between HFCS and sugar in Mexico. The upper trend line shows the strong inverse relationship between sugar and HFCS consumption, while the lower trend line shows that as HFCS consumption increases, sugar exports have grown as well. (The latter correlation is lower, however, indicating that there are also other factors at work).

The goal of this chapter is to better understand the upward limit for the HFCS consumption in Mexico. This information is valuable when forecasting, both short- and long-term, the amount of sugar that can be imported from Mexico to meet domestic consumption needs. There are also strong implications for the competitive sugar environment for U.S. producers and other import suppliers. This chapter uses data from an international consultancy, *Euromonitor International*, along with USDA data, to examine the HFCS potential in Mexico. It first examines demand for HFCS in Mexican food manufacturing and then for HFCS in the soft drink beverage industry.

Maximum HFCS Use in the Mexican Food Industry

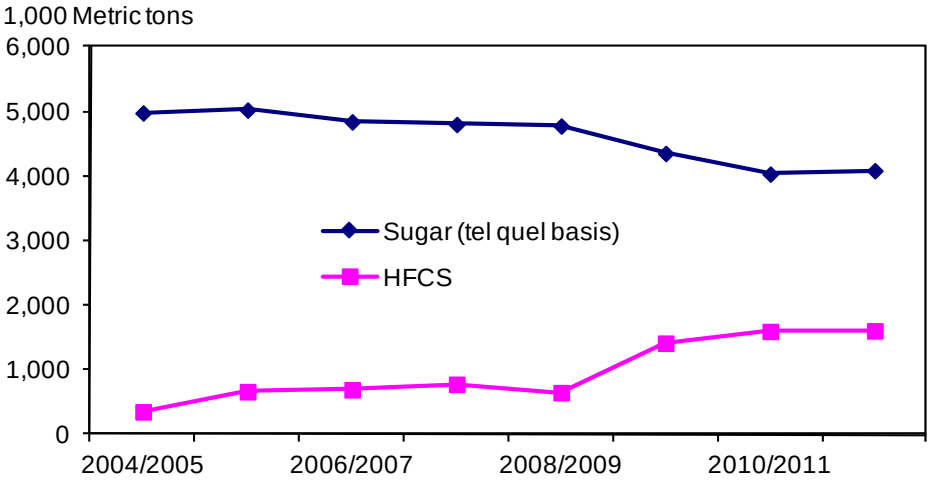
There are three steps involved in estimating the amount of HFCS that can be used in Mexican food manufacturing. The approach is to take what is known about the U.S. food industry demand for HFCS and sweeteners and then apply it to Mexico by adjusting for differences in the sizes of the sugar-using industries in both countries. This simple approach is a first pass and can be improved upon with availability of more and better data.

The first step is to calculate sweetener deliveries to U.S. sugar-using food sectors. These sectors are: bakery, cereal, and allied products; confectionery and related products; ice cream and dairy products; and canned, bottled, and frozen uses, plus all other food uses. Sugar deliveries to these food sectors are available from USDA's *Sweetener Market Data*. The Sugar and Sweetener Team estimates HFCS deliveries to the same corresponding food sectors. Sugar and HFCS deliveries are summed and HFCS as a proportion of the total is calculated. These proportions, as shown in table A-1, will serve as the assumed maximum share that HFCS can constitute of sweetener use in corresponding Mexican food sectors.

The second step is to estimate the sizes of the four food sectors in Mexico relative to those in the United States. The goal is to estimate the size of sweetener deliveries to these sectors. The estimation is based on analysis of data available from *Euromonitor International,* a consumer-strategy research firm that provides detailed market analysis for 80 countries. These countries include both the United States and Mexico. Two of the aggregate sectors covered by *Euromonitor International* are packaged food products and soft drinks. Packaged food products include the subset of sweetener-using food sectors.

Figure A-1

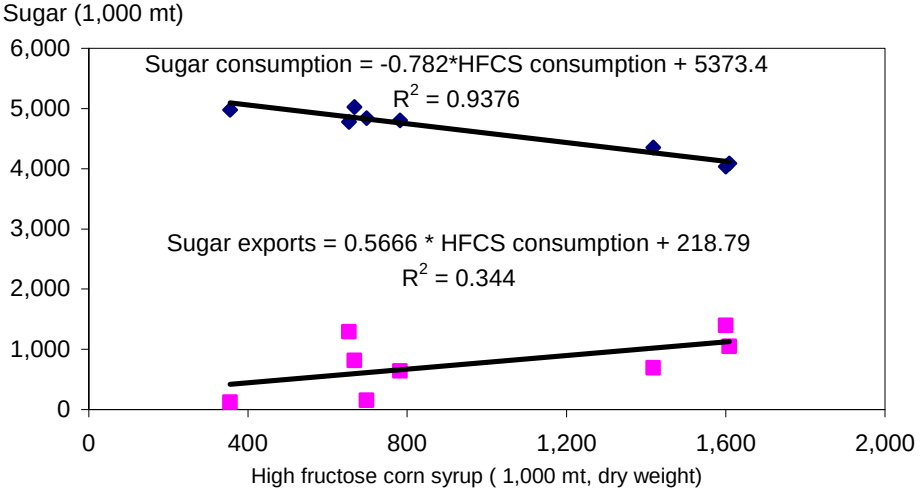
Sugar and high fructose corn syrup consumption in Mexico, 2004/05-2011/12



Source: USDA, ERS (HFCS), Foreign Agricultural Service (sugar),

Figure A-2

Tradeoff between sugar and high fructose corn syrup in Mexico



Source: USDA, Foreign Agricultural Service (sugar), Economic Research Service, (HFCS).

Table A-2 shows the product divisions within the sweetener-using food groups and the size of product sales for the United States and for Mexico. The sweetener-using food sectors in Mexico are substantially smaller than those in the United States. The United States has roughly three times the population of Mexico, and its food industries are much more highly developed. Although the Mexican bakery sector is 40 percent as large, the other sectors range only between 11 and 13 percent the size of their U.S. counterparts.

Each ratio is multiplied by the size the U.S. sweetener deliveries calculated in step 1 to approximate the level of sweetener deliveries to the corresponding Mexican sugar-using sectors. The HFCS ratios are then used to approximate the maximum level of HFCS deliveries to the sweetener-using sectors.

The third step is to use *Euromonitor International* food sector growth forecasts for projecting maximum HFCS consumption into future years. The right-hand panel of table A-2 shows sweetener-using food sector growth for Mexico and the United States through 2016. All food sectors in Mexico are projected to grow faster than those in the United States. Relative to the average for 2009-11, the aggregate size of sweetener-product sales for the four industries is about 36 percent higher (fig. A-3). The first data row of table A-3 shows the total maximum HFCS food sector use for the period 2012 through 2016.

Maximum HFCS Use in the Mexican Soft Drink Industry

Most HFCS is used as a sweetener in soft drink beverages. Unlike in food industry use, HFCS could theoretically constitute 100 percent of soft drink beverage sweetener use, although this level of use would not normally be expected. In the United States, for many years HFCS has constituted over 95 percent of sweeteners used in carbonated beverages, but sugar use in some carbonates and other beverages has been growing in recent years.

The method for estimating beverage sweetener use differs somewhat from that used for sweetener-using food sectors. The ERS Sugar and Sweetener Team multiplies *Euromonitor International* estimates/forecasts of Mexican beverage consumption volumes by corresponding sweetener-content coefficients (kilograms of sugar per liter of a particular beverage).[1] Figure A-4 shows the product shares of averaged 2009-11 Mexican soft drink consumption. Total consumption is estimated at 21.3 billion liters, with about half being constituted by cola carbonates. Figure A-5 compares estimated beverage sweetener use for 2009-11 with the forecast use in 2016. Sweetener use by the sector is expected to grow about 16 percent over the period.

The second data row in table A-3 shows projections of sweetener use in the Mexican beverage industry. As mentioned, these totals assume that HFCS could fully substitute for sugar. The two data rows are summed to provide an estimate of total HFCS consumption potential. The degree to which HFCS substitutes for sugar in the future will depend on relative prices, HFCS production capacity in the United States, development of enhanced transport systems for HFCS delivery, and taste and preferences in Mexico.

Conclusion

This exercise has shown that there is still a large potential to expand HFCS use in Mexico. Earlier work in USDA baseline projections had suggested lower limits than those shown here.[2] More research needs to be done to evaluate whether this potential can be realized. An implication is that Mexico could supply more sugar to the United States as greater substitution of HFCS for sugar takes place in Mexico.

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[1] Adapted by the Sugar and Sweetener Team from: USDA, *Weights, Measures, and Conversion Factors for Agricultural Commodities and Their Products.* Agricultural Handbook No. 697, 1992 and NUTTAB 2010 Online Searchable Database, "Foods that contain sucrose," Food Standards Australia New Zealand.

[2] http://www.usda.gov/oce/commodity/ag_baseline.htm .

Table A-1--Estimated share of high fructose corn syrup in U.S. food sector sweetener use

Bakery, cereal, and allied products	15.5%
Confectionery and related products	6.7%
Ice cream and dairy products	38.2%
Canned, bottled, & frozen uses plus all other food uses	47.7%

Source: USDA, ERS, Sugar and Sweetener Team.

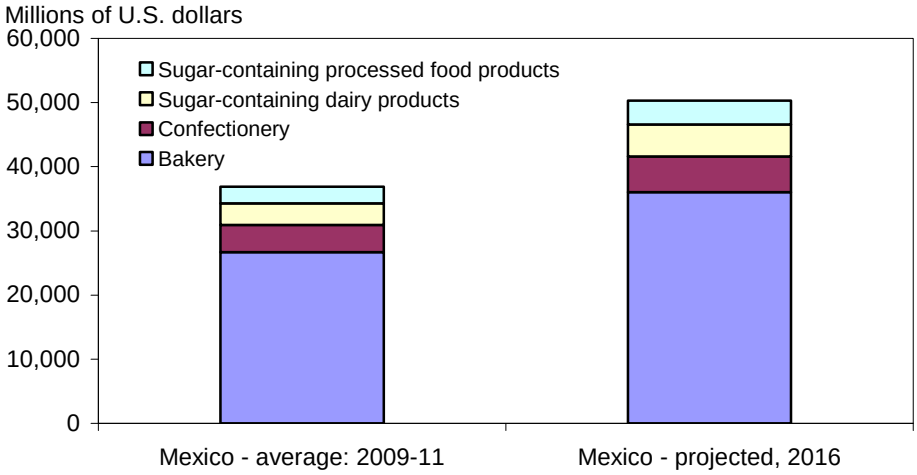
Table A-2--Relative size of sugar-containing food sectors in Mexico and United States, estimated average -- 2009-2011, and projected annual growth 2012-16

	Size of sugar-containing food sectors 2009-11		Average projected annual growth, 2012-2016	
	Mexico	United States	Mexico	United States
	Million U.S. dollars		Percent	
Bakery Baked goods, biscuits, hot and RTE cereals	26,705	67,455	3.81	2.53
Confectionery Chocolate confectionery, gum, sugar confectionery	4,214	31,654	3.63	3.13
Sugar-containing dairy products Flavoured milk drinks, flavoured powder milk drinks, Yoghurt, other dairy, ice cream	3,363	29,375	5.75	3.10
Sugar-containing processed food products Canned/preserved fruit, desset mixes, frozen desserts Pasta sauces, dips, ketchup, mayonnaise, mustard Salad dressings, snack bars, spreads	2,616	21,478	5.26	3.04

Source: USDA, ERS, Sugar and Sweetener Team -- calculations based on data from Euromonitor.

Figure A-3

Relative size of sugar-containing food industries in Mexico, 2009-11 average and 2016 projection



Source: USDA, ERS, Sugar and Sweetener Team - based on data from Euromonitor.

Table A-3--Potential calculated high fructose corn syrup consumption in Mexico, 2011-2016

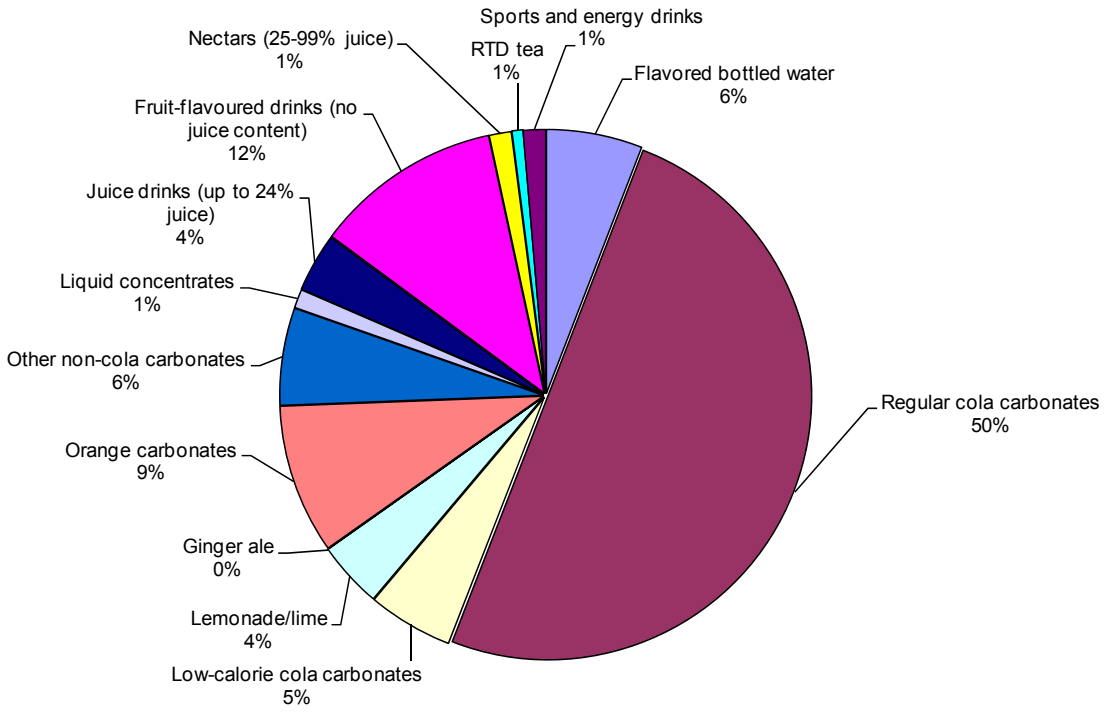
	2011	2012	2013	2014	2015	2016
	------ 1,000 metric tons, dry weight ------					
Sugar-containing food sector 1/	341	358	375	391	409	427
Soft drink beverages 2/	2,455	2,521	2,581	2,639	2,692	2,755
Total	2,796	2,879	2,955	3,030	3,100	3,182

1/ Assumes maximum HFCS shares of individual food sector sweeteners as detailed in table A-2.
2/ Assumes HFCS can displave 100 percent of sugar use.

Source: USDA, ERS, Sugar and Sweetener Team.

Figure A-4

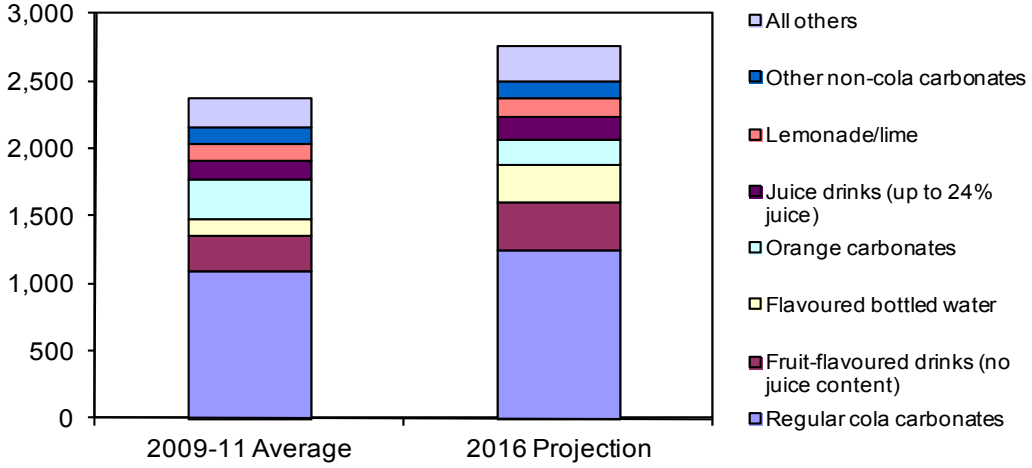
Soft drink beverage average in Mexico, 2009-11, average--21.3 billion liters



Source: USDA, ERS, Sugar and Sweetener Team, Analysis of data from Euromonitor International.

Figure A-5

Sweeteners in soft drink beverages, Mexico, 2009-11 estimated and 2016 projection



Source: USDA, ERS, Sugar and Sweetener Team, based on analysis of data from Euromonitor.

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Data

Tables from the *Sugar and Sweeteners Yearbook* are available in the Sugar and Sweeteners Briefing Room at http://www.ers.usda.gov/briefing/sugar/. They contain the latest data and historical information on the production, use, prices, imports, and exports of sugar and sweeteners.

Related Websites

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